

## C L A I M S

1. Method of providing a public, wireless broadband mobile service by upgrading a fixed, broadband access network comprising installing home network means at subscriber premises of said fixed network, the home network means comprising  
5 at least a wireless local area network (LAN) and a broadband access line to the fixed broadband network, wherein the wireless LAN functions as an access medium for casual passing mobile terminals and for wireless terminals and devices of said fixed subscribers.
- 10 2. Method according to claim 1,  
c h a r a c t e r i z e d i n dividing a bandwidth of the wireless LAN and the broadband access line of a fixed subscriber into respectively at least two separate channels, wherein a first channel is used by the fixed subscriber and a second channel is made public available for casual passing mobile terminals.
- 15 3. Method according to claims 1 or 2,  
c h a r a c t e r i z e d i n dynamically dimensioning the at least two channels dependent on fixed subscriber's instantaneous traffic in the wireless LAN and over the broadband access line, wherein a remaining bandwidth is made available for  
20 passing mobile terminals.
4. Method according to claims 2 and 3,  
c h a r a c t e r i z e d i n that the remaining bandwidth/second channel may include the portion of the physical realisable bandwidth not subscribed for by the  
25 fixed subscribers, the portion of the bandwidth subscribed for, but instantaneously unused by the fixed subscriber and the bandwidth that may be released due to priority mechanisms implemented in the network.
5. Method according to claim 1,  
30 c h a r a c t e r i z e d i n that the home network means and the public broadband network perform security and authentication functions securing the fixed subscriber and the passing mobile terminals against tapping and illegal use of said broadband network.

6. Method according to claim 1,  
characterized in providing protocols in the home network means and in  
said fixed network for performing mobility, handover and roaming procedures.

5 7. Digital, mobile broadband network providing public mobile or nomadic  
broadband services based on an existing fixed, broadband access network with a  
number of subscribers possessing a home network means comprising at least a  
wireless local area network (LAN) and a broadband access line to a public, fixed  
broadband network, wherein the wireless LAN functions as an access medium for  
10 casual passing mobile terminals as well as for local wireless terminals of the fixed  
subscriber.

8. Broadband network according to claim 7,  
characterized in that the bandwidths of the wireless LAN and the broad-  
15 band access line are divided in at least two separate channels, a first channel  
being used by the subscriber and a second channel public available for the casual  
passing mobile terminals.

9. Broadband network according to claim 8,  
20 characterized in that the at least two channels are dynamically dimensioned  
dependent on fixed subscriber's instantaneous traffic in the wireless LAN and  
over the broadband access line, wherein a remaining bandwidth is made available  
for passing mobile terminals.

25 10. Broadband network according to claims 8 and 9,  
characterized in that the channel for passing mobile terminals comprising  
the portion of the physical realisable bandwidth not subscribed for by the fixed  
subscriber, the portion of the bandwidth subscribed for, but instantaneously un-  
used by the fixed subscriber and the bandwidth that may be released due to priority  
30 mechanisms implemented in the network.

11. Broadband network according to claim 7,  
characterized in that the home network means and the broadband ac-  
cess network perform security and authentication functions securing the fixed sub-

scriber and the passing mobile terminals against tapping and illegal use of said broadband network.

12. Broadband network according to claim 7,  
5 characterized in that the home network means and said fixed broadband access network comprising protocols for performing mobility, handover and roaming procedures.

13. Home network device providing public mobile or nomadic broadband services in an existing fixed, broadband access network comprising a number of subscribers, wherein said device comprising:

- a. A wireless LAN providing local, wireless broadband communication for the subscriber of the fixed, broadband network and broadband communication for casual passing mobile terminals,
- 15 b. A broadband access line connected to the fixed broadband network,
- c. Appropriate traffic and control functions needed for wireless mobile communication.

14. Home network device according to claim 13, comprising a resource management system and multiplexer means dividing the physical available bandwidths of the wireless LAN and the broadband access line into at least two channels, a first channel to be used by the fixed network's subscriber and a second public channel available for the casual passing mobile terminals.

25 15. Home network device according to claim 14, comprising a resource management system performing dynamical bandwidth allocation to the casual passing mobile terminals dependent on the fixed subscriber's instantaneous traffic load on the wireless LAN and over the broadband access line.

30 16. Home network device according to claim 13, comprising switching/routing means passing traffic to and from the broadband access network and the different wireless terminals located within the reach of the wireless LAN.

17. Home network device according to claim 13, comprising protocol means providing seamless mobility and handover procedures for maintaining the connection to the fixed broadband access network for a mobile terminal passing subscriber wireless LANs.

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18. Home network device according to claim 13, comprising protocol means providing roaming between different fixed, network operators, P2P/Ad Hoc operators and individual subscriber LANs.

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19. Home network device according to claim 13, comprising function means supporting the broadband network's management and charging requirements.

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20. Use of a home network device comprising at least a wireless LAN and a subscriber's broadband access line to a public broadband access network providing local wireless communication for the fixed subscriber and mobile broadband services to casual passing wireless terminals.